Space Weather Forecast

Issued on Saturday, 06 August 2022 at 01:15 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: G1/Minor Storms possible due to coronal hole fast wind activity. Slight chance of Moderate-class flares.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity has been Low over the past 24 hours with isolated Common-class flares. There are currently five numbered regions on the disc, most of which are small, weak and appear magnetically stable. The largest region on the visible disc is one of the regions in the southwest, but this has shown only minor activity so far. A possible Coronal Mass Ejection (CME) was observed from a flare at 05/0644UTC from one of the regions in the southwest quadrant. Analysis of this event is difficult due to lack of imagery, but it is currently considered unlikely to be Earth directed.

Solar Wind / Geomagnetic Activity: The solar wind has been slightly elevated levels under a waning fast wind from a coronal hole. Wind speeds have varied between 370-430 km/s. The total interplanetary magnetic field was weak, with a brief increase to moderate around 05/0045UTC. The north-south component fluctuated mostly weakly. Geomagnetic activity was Quiet to Unsettled (Kp 0-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Low solar activity is likely to continue at first, with a slight chance of a Moderate-class flare. Potential new regions may rotate onto the disc in the next couple of days, increasing flare probabilities slightly, although one of the regions in the southwest quadrant will rotate off on Day 4 (09 Aug).

Solar Wind / Geomagnetic Activity: The CME observed from one of the regions in the southwest quadrant is currently considered unlikely to be Earth directed. Wind speeds are now just below 400 km/s. Later on Day 1 (06 Aug) a new coronal hole fast wind is expected to arrive, with wind speeds of 500-550 km/s likely. Wind speeds from this feature are expected to slowly ease through Day 3 (08 Aug), before a further increase is likely on Day 4 (09 Aug) from another coronal hole.
Geomagnetic activity should remain Quiet to Unsettled at first, increasing Unsettled to Active later Day 1 and into Day 2, with a slight chance of isolated G1/Minor Storm intervals occurring. Activity should decline through Days 2 and 3 to mainly Quiet, before another increase on Day 4 with a chance of G1 intervals once again.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	20	20	5	30
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	15	20	25	25
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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